general

CONTENTS

Rapid Estimation of Base-Exchange Properties of Soil. ADOLF MEHLICH 1
A Rapid Versus a Quantitative Method For Determining Available Magnesium in Soils. W. H. GARMAN AND F. G. MERKLE 15
A Wet Combustion Method for Determining Total Carbon in Soils. NORMAN ASHWELL CLARK AND CLYDE L. OGG 27
Phosphorus Fixation by Soil Separates and Fractions. A. T. PERKINS, C. E. WAGONER, AND H. H. KING 37
Evidence in Support of a New Concept as to the End Product of Superphosphate in Limed Soils. W. H. MACINTIRE AND B. W. HATCHER 43
Air and Soil Temperatures in a California Date Garden. DONALD E. BLISS, D. C. MOORE, AND C. E. BREAM 55
Influence of Orchard Soil Management upon the Infiltration of Water and Some Related Physical Characteristics of the Soil. LAI YUNG LI, R. D. ANTHONY, AND F. G. MERKLE 65
Comparative Study of the Calcium-Boron Metabolism of Representative Dicots and Monocots. R. P. MARSH 75
Stability of Clay Soils. E. C. CHILDS 79
Methods of Observing Soil Flora and Fauna Associated With Roots. M. B. LINFORD .. 93
The Comparative Physical Constitution of Water-Stable Granules and of the Originating Soil. R. B. ALDERFER AND F. G. MERKLE 105
Adsorption of Barium and Hydroxyl Ions by Soils and Minerals in Relation to pH. ADOLF MEHLICH 115
Calcium- and Sulfate-ion Concentrations in a Soil Receiving Excess Gypsum, as Influenced by Several Factors. I. E. VANONI AND J. P. CONRAD 125
Studies on the Ceruleomolybdate Determination of Phosphorus. B. R. BERTRAMSON .. 135
The Significance of Oxygen in Nutrient Substrates for Plants. I. The Oxygen Requirement. S. G. GILBERT AND J. W. SHIVE 143
Books 153
The Hardpan and the Claypan in a San Joaquin Soil. C. C. NIKIFOROFF AND L. T. ALEXANDER 157
The Use of the Micrometric and Other Methods for the Evaluation of Soil Structure. C. L. W. SWANSON AND J. B. PETERSON 173
Volume Change and Pore Space of Saturated and Dry Soil Clods in Relation to Different Soil Types and Land Utilization. P. I. VLASOFF 187
Infiltration Studies in the Pecos River Watershed, New Mexico and Texas. HILLARD L. SMITH AND LUNA B. LEOPOLD 195
Resistance of Clay-Adsorbed Proteins to Proteolytic Hydrolysis. L. E. ENSMINGER AND J. E. GIESEKING 205
Determination of Iron in Soils and Silicates by the Mercurous Nitrate Method. ROBERT KUNIN 211
Comparative Efficiency of Organic Phosphorus and of Superphosphate in the Nutrition of Plants. B. R. BERTRAMSON AND R. E. STEPHENSON 215
Inoculation of Soil with Azotobacter Chroococcum. J. E. GREAVES AND L. W. JONES .. 229
The Occurrence of Bacteriostatic and Bactericidal Substances in the Soil. SELMAN A. WAKSMAN AND H. BOYD WOODRUFF 233
Soil Moisture Tensiometer Materials and Construction. L. A. RICHARDS 241
The Chemical Composition of the Clay Fractions of the Black Prairie Soils of Minnesota. ALFRED C. CALDWELL AND C. O. ROST 249
Flocculation and Electrokinetic Behavior of Two Deferrated Soil Colloids. STEPHEN J. TOTH 265
A Calibrated Soil Probe for Measuring Field Soil Moisture. R. B. ALLYN 273

Adsorption and Fixation of Copper in Some Sandy Soils of Central Florida. VERNON C. JAMISON 287
Extraction of Auxin from Virgin Soils. WILLIAM S. STEWART, MARY G. KEYES, AND M. S. ANDERSON 299
Boron Content of Hickory and Some Other Trees. W. O. ROBINSON AND GLEN EDGINGTON 309
Plant Nutrition and the Hydrogen Ion: I. Plant Nutrients Used Most Effectively in the Presence of a Significant Concentration of Hydrogen Ions. WM. A. ALBRECHT AND R. A. SCHROEDER 313
Application of the Mitscherlich Method to the Determination of Available Phosphate in Some Iowa Soils. C. DALE HOOVER AND A. G. NORMAN 329
Effects of Aluminum on Copper Toxicity, Spectrographic Studies of Citrus. GEORGE F. LIEBIG, JR., ALBERT P. VANSELOW, AND H. D. CHAPMAN 341
The Thermal Method as a Quantitative Measure of Clay Mineral Content. G. M. SCHAFER AND M. B. RUSSELL 353
Field Studies on Methods for Determining Availability of Selenium to Plants. O. E. OLSON, D. F. JORNLIN, AND A. L. MOXON 365
Erosion Losses of Major Plant Nutrients and Organic Matter from Collington Sandy Loam. H. C. KNOBLAUCH, L. KOLODNY, AND G. D. BRILL 369
Effect of Submergence on a Podzol Soil Profile in the Adirondack Forest. THEODORE H. EATON, JR. 379
Some Effects of Black Locusts and Black Walnuts on Southeastern Ohio Pastures. RICHARD MERIWETHER SMITH 385
The Importance of Sodium for Plant Nutrition. III. The Equilibrium of Cations in the Beet. J. J. LEHR 399
Laboratory Study of the Response of 2- and 4- Electrode Plaster of Paris Blocks as Soil-Moisture Content Indicators. ALFRED B. C. ANDERSON AND N. E. EDLEFSEN .. 413
An Automatic Self-Recording Infiltrometer. D. D. PITTMAN AND HELMUT KOHNKE .. 429
The Thermal Conductivity of Dry Soil. W. O. SMITH 435
Influence of Low Recessional Moraines on Soil Type Pattern of the Mankato Drift Plain in Iowa. CHARLES S. GWYNNE AND ROY W. SIMONSON 461
Notes on the Influence of Microorganisms on Growth of Squash Plants in Water Culture with Particular Reference to Manganese Nutrition. H. A. BARKER AND T. C. BROYER 467
Are There Obligate Cellulose-Decomposing Bacteria? ROGER Y. STANIER 479
Plant Nutrition and the Hydrogen Ion. II. Potato Scab. R. A. SCHROEDER AND WILLIAM A. ALBRECHT 481